

REMARKS

In response to the above-identified Office Action (“Action”), Applicants traverse the Examiner’s rejection to the claims and seek reconsideration thereof. Claims 1-23 are pending in the present application. Claims 1-23 are rejected. In this response, claims 1, 3-23 are amended, claim 2 is cancelled and no claims are added.

I. Claim Amendments

In the instant response, claims 1, 3-23 are amended. Applicants respectfully submit the amendments are supported by the specification and do not add new matter.

In particular, claim 1 is amended to recite a “self supported film of gallium nitride,” to incorporate the limitations of now cancelled claim 2 and finally to recite the step of “a spontaneous separation step at the weak area to obtain the self-supported film of gallium nitride. Support for the amendment to claim 1 is found, for example, on page 9, lines 3-4 and page 32, lines 12-15.

In addition, claims 3-23 are amended to correct various informalities. In particular, the claims are amended for consistency with the amendments to claim 1, to replace the recitation of “characterized in that” with “wherein,” to depend from claim 1 instead of now cancelled claim 2 and/or to correct the multiple dependency issue raised by the Examiner.

In view of the foregoing, Applicants respectfully request consideration and entry of the amendments to claims 1, 3-23.

II. Claim Objections

In the outstanding Action, the Examiner objects claims 8-23 under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim depends from multiple dependant claims.

Applicants respectfully submit herewith amendments to claims 8-23 to correct the improper multiple dependent form. In particular, claims 8-17, 19 and 22-23 are amended to

depend from claim 1. Claims 18, 20 and 21 are amended to depend from one of claims 1 or 3-17. Since claims 3-17 are no longer in multiple dependent form, claims 18 and 20 as amended now depend from claims which are in dependent, but not multiple dependent form.

Accordingly, Applicants believe the amendments to claims 8-23 place the claims in proper dependent form.

In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 8-23 on this basis.

III. Claim Rejections – 35 U.S.C. §103

In the outstanding Action, the Examiner rejects claims 1-23 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Publication No. 2003/0064535 issued to Kub et al. (“Kub”) in view of U.S. Patent No. 6,325,850 issued to Beaumont et al. (“Beaumont”). Applicants respectfully traverse the rejection.

Claim 2 is cancelled therefore the rejection to claim 2 on this basis is moot.

To establish a *prima facie* case of obviousness, the Examiner must show that the cited reference teaches or suggests each of the elements of a claim. Hindsight reconstruction may not be used to modify the reference to meet the claimed invention. MPEP § 2145. Furthermore, the fact that the claimed invention is within the capabilities of one of ordinary skill in the art, without some showing of an objective reason for modifying the reference to arrive at the claimed invention, is not sufficient to establish a *prima facie* case of obviousness. *In re Kotzab*, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1318 (Fed. Cir. 2000).

In regard to independent claim 1, Kub in view of Beaumont fails to teach or suggest at least the elements of a method for obtaining a self-supported film of gallium nitride which comprises the following successive steps: (i) a deposition step; (ii) an implantation step; (iii) an epitaxial lateral overgrowth (ELO) step; and (iv) a separation step for obtaining said self-supported film of GaN as recited in amended claim 1.

Using an epitaxial lateral overgrowth after the implantation as recited in claim 1, allows for separation of the GaN layer from the substrate after the ELO for obtaining the self-supported

film of GaN. Indeed, in the method recited in claim 1, it is very important that the separation steps do not intervene during the thickening of the GaN layer, thus assuring that the GaN layer be sufficiently rigid for supporting herself.

As mentioned on page 26, line 29 to page 27, line 4, “it is necessary to obtain a film of GaN which is sufficiently thick, and therefore sufficiently strong from the mechanical point of view, for the subsequent separation to involve the entire treated surface and therefore to avoid fracture of the layer of GaN into pieces with a small surface area” during the separation step.”

Thus the use of epitaxial lateral overgrowth after implantation results in self-supported films of GaN, contrary to the method of Kub which provides thin films of GaN that need to be transferred on a handle substrate (to avoid fracture and/or deformation of the thin GaN layer).

In particular, Kub describes a method for obtaining a GaN layer on an optimal handle substrate (see Kub paragraphs [0003], [0014], [0026] and figure 1a to 1d and 2a to 2d). The method comprises the steps of deposition of GAN on a transfer substrate (see Kub, paragraph [0026]: “Referring now to figure 1a, a transfer substrate 110 is employed as a substrate upon which an epitaxial GaN layer 114 is grown”), an implantation step (see Kub, paragraph [0030]: “Hydrogen ions are implanted in the epitaxial GaN layer 114 thereby forming an intermediate hydrogen ion implant layer 116”), bonding a handle substrate on the GaN layer of the transfer layer (see Kub, paragraph [0032]: “The transfer substrate 110 with epitaxial GaN layer 114 grown thereon is bonded to a desired handle substrate 122...to form a joined structure 124”) and a separation step for separation of the handle substrate and the GaN layer from the transfer substrate (see Kub, paragraph [0034]: “The joined structure 124 is heated to a sufficient temperature to split the GaN layer 114 along the ion implant layer 116”).

Thus, the method of Kub comprises an additional step consisting in bonding the GaN layer of the transfer substrate to the handle substrate. Kub does not describe a method for obtaining a self-supported film of GaN (i.e., a film with substrate). In addition, as admitted by the Examiner on page 3 of the Action, Kub does not describe the step of reworking by epitaxial lateral overgrowth, much less reworking by epitaxial lateral overgrowth **after the step of implantation.**

In addition, the combination of Kub and Beaumont fails to describe applying such step after the implantation step as recited in amended claim 1. Instead, in Kub, the growth steps of GaN are done before the implantation (see paragraph [0037] of Kub) and in Beaumont, no step of implantation is described. Accordingly, even if it were possible to find that the references teach implementation of an epitaxial lateral overgrowth, and Applicants do not believe this is the case, upon review of the references, one skilled in the art would implement the epitaxial overgrowth before the implantation step, not after.

Thus, for at least the foregoing reasons, the combination of Kub and Beaumont fails to teach or suggest each and every element of claim 1. Since each and every element of the claim is not found within the references, a *prima facie* case of obviousness may not be established. In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of the rejection of claim 1 under 35 U.S.C. §103 over Kub in view of Beaumont.

In regard to claims 3-23, claims 3-23 depend from claim 1 and incorporate the limitations thereof. Thus for at least the reasons discussed in regard to claim 1, Kub and Beaumont fail to teach or suggest a method for obtaining a self-supported film of gallium nitride which comprises the following successive steps: (i) a deposition step; (ii) an implantation step; (iii) an epitaxial lateral overgrowth (ELO) step; and (iv) a separation step for obtaining said self-supported film of GaN as further found in claims 3-23. Since each and every element of the claims is not found within the references, a *prima facie* case of obviousness may not be established. In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 3-23 under 35 U.S.C. §103 over Kub in view of Beaumont.

CONCLUSION

In view of the foregoing, it is believed that all claims now pending, namely claims 1 and 3-23, are now in condition for allowance and such action is earnestly solicited at the earliest possible date. If there are any additional fees due in connection with the filing of this response, please charge those fees to our Deposit Account No. 02-2666. Questions regarding this matter should be directed to the undersigned at (310) 207-3800.

Respectfully submitted,

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CERTIFICATE OF TRANSMISSION

I hereby certify that this correspondence is being submitted electronically via EFS Web to the United States Patent and Trademark Office on May 2, 2007.


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